

ENGY-1250-INTRODUCTION TO OIL AND GAS INDUSTRY 3 CREDITS

SYLLABUS

CATALOG DESCRIPTION

Students will study producing natural gas and oil, from how gas and oil are formed and the geologic formations in which they are found, exploring, drilling and completing the well location to the sale of the product to include: typical geology, how gas and oil are found, the drilling technique, the wellhead, casing and tubing, completion of the well and the surface equipment required for managing production. Managing production and how it is traded and marketed and transported to consumers and the trends and challenges of the oil and gas industry will be discussed.

Prerequisites: None

Semester Offered: All

COMMON STUDENT LEARNING OUTCOMES

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

COURSE LEARNING OUTCOMES

Upon successful completion of the course, the student will be able to...

1. Explain how hydrocarbons and petroleum are formed and the geologic formations they are found in and explain the difference between porosity and permeability of a formation.
2. Demonstrate their understanding of the composition of crude oil and the different unconventional sources for crude oil and the products created from crude oil.
3. Demonstrate their understanding of the formation of natural gas and the different formations it is found and recent trends in the industry.
4. Demonstrate their understanding of some of the processes used to explore for oil and gas.
5. Explain the need for casing and tubing in a well and identify their functions for oil and gas production.
6. Explain the function and installation of the wellhead for oil and gas production and recognize the parts and functions of a wellhead.
7. Identify the differences in onshore and offshore installations
8. Identify and explain the function of the equipment on a typical well location and how it is used to manage production and explain the use of artificial lift methods to manage production.
9. Explain how oil is transported and stored, how natural gas is transported, measured and distributed and the role of compression in the process and how LNG(Liquefied Natural Gas) is produced and transported.
10. Demonstrate the terminology used and some of the processes and products derived from oil and natural gas.
11. Explain the structure, how the trading is done and the current trends and challenges of the oil and gas industry.